LOGO

Sustainable Packaging for Sushi Delivery: Bridging Design and Sustainability

Embalagens Sustentáveis para Delivery de Sushi: Unindo Design e Sustentabilidade

André Canal Marques

Designer, PhD in Engineering, Professor and Researcher at PPG in Design, Coordinator of FabLab, UNISINOS

andrecm@unisinos.br

Nícolas Cerri Mester

Designer, UNISINOS

nicolascmester@gmail.com

ABSTRACT

In the current climate crisis scenario, the increasing accumulation of waste generated by disposable items underscores the need for sustainable alternatives. This project aimed to develop a sustainable packaging system tailored for sushi delivery. The goal was to create packaging from sustainable materials, reducing the use of disposables and promoting environmental awareness. The methodology of strategic design, including contextual research and scenario creation, guided the decisions. The result is a packaging solution and service system for restaurants, utilizing renewable materials to mitigate the environmental impact of food delivery services.

KEYWORDS

Strategic Design; Packaging Design; Sustainability.

RESUMO

No atual cenário de crise climática, o crescente acúmulo de resíduos gerado pelo uso de descartáveis ressalta a necessidade de alternativas sustentáveis. Este projeto buscou desenvolver um sistema de embalagem sustentável direcionado ao delivery de sushi. O objetivo foi criar embalagens a partir de materiais sustentáveis, reduzindo o uso de descartáveis e promovendo a conscientização ambiental. A metodologia de design estratégico, incluindo pesquisas contextuais e a criação de cenários, orientou as decisões. O resultado é uma solução de embalagem e um sistema de serviço para restaurantes, utilizando materiais renováveis para mitigar o impacto ambiental do serviço de delivery de alimentos.

PALAVRAS-CHAVE

Design estratégico; Design de embalagem; Sustentabilidade.

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1. INTRODUCTION

Due to the increasing population, the disposal of solid waste has become an issue of concern (SILVA et al., 2018). In Brazil, according to estimates presented in the National Solid Waste Policy (PNRS, 2010), 51.4% of municipal solid waste (MSW) consists of organic matter, 16.7% of other materials, and 31.9% of recyclable materials. Despite the growth of recycling in the country in recent years, most of it ends up in landfills or worse, open dumps (CEMPRE, 2019).

With the rise of food delivery services, the use of packaging to contain products is essential. It plays a crucial role in extending the shelf life of food products. However, the packaging industry is the largest converter of virgin plastic into products and was responsible for converting nearly 40% of all plastic produced in 2015 (WWF, 2019). In the same year, the United Nations proposed a new sustainable development agenda for its member countries for the next 15 years, the Agenda 2030, consisting of 17 Sustainable Development Goals (SDGs) (ONU BRASIL, 2015). The present work, which focuses on packaging and sustainability awareness, falls under Goal 12, which aims to ensure sustainable consumption and production patterns.

This study is directly related to the consumption and eating habits of today's society, focusing on the production and disposal of non-recyclable packaging, which harms nature, generates waste and pollution, and consequently contributes to the environmental problems and climate crisis we face. It is of paramount importance to raise society's awareness of this issue and to develop initiatives that promote sustainable practices and habits.

It is important to note that this article is the result of a part of the undergraduate thesis project in Design at the Universidade do Vale do Rio dos Sinos (Unisinos), with the main objective of developing a product-service system of packaging made of sustainable materials to promote the reduction of packaging waste from delivery services. For this purpose, a literature review was conducted on the three main topics for the theoretical foundation of the project: strategic design, design and sustainability, and packaging design, as presented below.

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2. STRATEGIC DESIGN, SUSTAINABILITY AND PACKAGING

Strategic design is much more than just creating or developing something for a particular situation; it requires a complete understanding and comprehension of everything the company is involved with. According to Manzini (1999, as cited in ZURLO, 1999, p.10), "strategic design is a design activity in which the object is the company-client-society interface, and the goal is the convergence of the company, customer, and other stakeholder perspectives into a single value co-production process".

Nascimento (2017) considers strategic design as an articulation of different fronts involved in the design process of products, services, communications, and experiences that organizations develop to materialize their strategies. This articulation is commonly referred to as a product-service system (PSS). To put it into practice, it is necessary to understand its process and possibilities. According to Zurlo (1999), design has the capacity: to read and interpret reality, to project possible paths from this interpretation, and to make these worldviews visible and shareable so that all stakeholders responsible for creating strategies share this vision.

For Manzini (2008), launching a new product means producing and presenting not only a signifier, the product itself, but also a signified, its potential placement in the collective imagination. Through the acquisition and interpretation of use, the individual communicates with others, conveying to them numerous messages of various kinds. Norman (2008) argues that it is necessary to analyze and understand the context in which one is operating, to know the client and the project environment.

In relation to packaging design in the environmental debate, it becomes fundamental to understand the project context because, as stated by (CAMILO, 2009), it will always be influenced by the client, cost, individual responsibility, and essentially by the briefing, which is the synthesis of information necessary for any design project. It is necessary for professionals to influence stakeholders to develop sustainable projects. To operate in this scenario of high complexity, packaging designers cannot be professionals limited only to formal

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design issues. They need to go beyond, gaining a better understanding of the universe in which it operates to interact with other participants in the chain, truly integrating into the project.

Packaging has been part of human life since it was necessary to transport and package goods. There are four functions that packaging can perform: containment, protection, communication, and utility (MOURA and BANZATO, 1997, as cited in PEREIRA and SILVA, 2010). Modern packaging is a system that involves materials, technology, processes, equipment, design, marketing, logistics, and communication. Its objective is to package the product, protecting it so that it can last, be transported, displayed, and marketed, reaching the consumer in perfect consumption conditions (MESTRINER, 2002). Packaging design plays a fundamental role in product and brand strategy, and it should be thought of holistically, taking into consideration all strategic aspects to meet the company's objectives and satisfy consumer needs.

Since design is the field of knowledge that creates the artificial environment and requires an integrative and systemic view of human problems, it is understandable and even desirable that there is a convergence of interest between sustainability and design as a way to address the complex problems caused by various anthropocentric activities related to the production, consumption, and disposal of goods and services (SIMON, 1981).

Design plays an important role in the development of these new material solutions and their applications, offering new opportunities for value creation, but also for reducing the environmental impact (MANZINI, 2008). In this approach, the consideration of the environment in design is as important as technical feasibility, cost and market demand. It is a design model guided by ecological criteria, with design activities that tend to address the issues proposed by the environmental question, starting from the redesign of the products themselves. Ecodesign is also an approach to continuous improvement, since any product has an environmental impact, and therefore no improvement is definitive or final (ZAVADIL and SILVA, 2013).

In the practice of design for sustainability, selecting materials with low environmental impact is one of the easiest strategies to

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implement, so it is important to be aware of the properties of materials, whether related to product design or product-service systems. Two important issues for material selection are to consider the whole life cycle of the product or system being designed and the own life cycle of the material being used (AVILA et al., 2018). Packaging also has its own life cycle, which includes pre-production, production, distribution, use, and disposal phases, and is therefore characterized by a series of interactions with the environment that determine its environmental impact. Thus, the distribution phase of products coincides with the beginning of the use phase of packaging (ZAVADIL and SILVA, 2013).

According to Camilo (2009), sustainable packaging must meet some requirements: it must be beneficial, safe and healthy for individuals and the community throughout its life cycle; it must be researched, manufactured, transported and recycled using renewable energy; it must maximize the use of renewable and recyclable materials; and it must be designed to optimize the use of materials and energy to effectively complete its life cycle.

3. METHODOLOGY

The methodology used in the work is presented, starting with a bibliographic research to establish the theoretical basis of the project. After the completion of the bibliographical research, which provided essential minimum knowledge for the development of the project, the metaprojective phase was carried out. This phase aims to explore and deepen the issues presented in the briefing, seeking a deeper understanding. As Moraes (2010, p. 25) states, it has the capacity to "explore all the potential of the design in the articulated and complex system of prior knowledge that guides the design process". According to Celaschi (2007), the metaproject is the ideation and organization of the research and design process. This phase culminates in the elaboration of a project concept to be developed in the subsequent project phase. This phase focuses on practical and tangible aspects, aiming to materialize what was conceived in the previous phase through technical detailing, prototyping and validation. In this study, a part of the research stages of materials, scenarios, product-service system, logo and packaging is presented.

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3.1 CONTEXTUAL RESEARCH

Contextual research is the first stage of the metaproject and includes tools aimed at analyzing the characteristics of the client, the user and the market in which the product-service will be inserted (FINESTRALI and REYES, 2010). Its purpose is to establish and define the project context in order to guide the design activity (GALISAI, BORBA and GIORGI, 2008). This section presents survey research, interviews and material research.

3.1.1 Survey research

It is a qualitative survey designed to reach as many people as possible and was conducted online. It can be defined as a way of collecting data and information based on the characteristics and opinions of groups of individuals. The purpose was to analyze the sustainable practices among the food delivery users, their opinions, views and knowledge about organic materials. It also aimed to understand their consumption habits and how they perceive the current situation regarding environmental issues and the climate crisis. The survey was conducted using the Google Forms platform, and was promoted on Instagram and WhatsApp in order to reach a diverse audience and obtain a variety of responses.

3.1.2 Interviews

Interviews are a very important part of the metaproject phase, as they provide a more concrete view of the issue to be addressed. By talking to experts in the field, one can gain a better understanding of how to proceed with the project, potential problems that may arise, and also as a source of inspiration for continuing the work. For this phase, interviews were conducted online with experts in the field of recycling and companies involved in packaging development.

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3.2 CREATION OF SCENARIOS

After analyzing all the research conducted in the contextual phase, the polarity map is constructed by selecting two words and their respective antonyms, which are placed on two axes, one vertical and the other horizontal, forming this map. From the creation of the polarity map and the combination of these words, 4 possible scenarios emerge. Each of these scenarios was visually represented through images or collages using mood boards.

Based on everything that was discussed and from the scenarios, concepts were created, which are sketches of ideas to represent the concept of possible design paths. Finally, the design concepts are appropriately evaluated to select the most interesting viable concepts to be implemented in the next phase. This allows an objective progression towards design development (FRANZATO and CELASCHI, 2012).

3.3 FINAL PROJECT

In this design phase, the previously created concepts were rethought and developed into a final proposal, including the design of the product-service system, logo, and packaging. A product-service system model was conceived to promote a holistic brand vision, aiming to create a long-term relationship with customers. The entire visual identity of the product, represented here by the logo, was designed to convey its connection with the environment, its sustainability, and the need to preserve and care for nature. For the packaging, many models were studied until the final solution was found that was best suited to the service to be offered. The prototypes were designed to be as close as possible to the original paper and to facilitate assembly, for the benefit of the restaurant and its staff.

4. RESULTS AND DISCUSSION

4.1 CONTEXTUAL RESEARCH

In the contextual research phase, various studies were conducted, but this study focuses on reporting the material research.

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4.1.1 Survey research

For the survey, questions were developed that focused on the consumer audience of food delivery, with the intention of understanding the different types of people who use it and whether or not they bring responsible ecological attitudes to this moment and to their daily lives.

110 responses were collected, with half of the participants between the ages of 19 and 25. The answers varied widely, but the most frequently mentioned practices were separating waste, reducing or trying to avoid using plastic, avoiding disposable items and saving water. Regarding the consumer's relationship with delivery, they were asked how often they order food delivery per week, with just over half of respondents saying they order every other week, and of those who order weekly, at most once or twice.

Two complementary questions were then asked of all the respondents to find out if, when they receive their order, they pay attention to whether the packaging is ecological and, if not, whether they would stop buying from that restaurant. An interesting fact was that 65% of people pay attention to whether the packaging is ecological, and of those, 84% answered that they would not stop consuming from that place if they did not use ecological packaging. From these numbers, we can conclude that there is a lot of consumer interest in ecological practices, but it stops there.

90% of respondents said they do not request disposable utensils or other items when ordering food, while others said they only do so when there is no other option. Respondents were also asked what materials are best for delivery packaging from the consumer's perspective. There were several options and the person was free to choose more than one. After considering all the other responses from the previous questions, the results were as expected. The vast majority voted for the "biodegradable materials" option, followed by recycled plastic and cardboard.

4.1.2 Interviews

In addition to the survey of the target audience, interviews were conducted with experts in the field to gain a deeper understanding and

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insight into the issues addressed in the project. These experts have a greater knowledge of packaging as they work directly in the field. For each interview, a set of questions was developed based on the expert's area of expertise.

Some interesting answers regarding the packaging sector highlighted some key points in this segment: It is not enough for the product to be sustainable if it does not have the financial means to enter the market, and of course it does not help if it is very cheap but not sustainable. Another important point is product quality. In this business, you always have to keep in mind the quality, the sustainability, and the price of the product in order to be successful.

Regarding the companies' perception of the environmental awareness of the target audience/customer, it is argued that it is still very specific and requires a lot of campaigns and education, with promising results in terms of compliance with reverse logistics campaigns. It is believed that progress is being made, albeit slowly, towards an economic model that values circular and sustainable projects.

4.1.3 Material research

This research considered different types of sustainable materials, such as biopolymers, recycled materials, biodegradable materials, and compostable materials. The materials that stood out were: Kraft paper, bamboo, PLA, sugarcane bagasse, coconut fiber, and seaweed. The seaweed material produced by the London-based company Notpla, shown in Figure 1, stood out because the development of sheets or paper made from seaweed represents an innovative and sustainable approach to the paper industry. These alternative materials have the potential to replace conventional paper, which is often derived from trees and is associated with environmental issues such as deforestation and pollution from the production process. The company aims to expand the use of sustainable packaging that can replace difficult-to-recycle materials with options that are easily degradable.

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Figure 1: Material from the company Notpla.

Source: Notpla (2022).

4.2 CREATION OF SCENARIOS

In order to create the scenarios, a polarity map was first created by selecting words that are most closely related to the topic of the thesis, words that when combined create new terms to be used for scenario creation. The words chosen for the map are "nature" and "creativity", because they are concepts that are considered important for sustainability and are widely discussed in the development of society in general. Thus, on the horizontal axis we have the words "Creativity" and "Monotony", and on the vertical axis we have "Nature" and "Urban", as shown in Figure 2. The scenarios were all designed with the idea of sustainability in mind, considering how they would be with or without concern and/or action regarding this issue. The scenario chosen for the final project development is shown in the figure, Quadrant 2 (Urban-Creativity).

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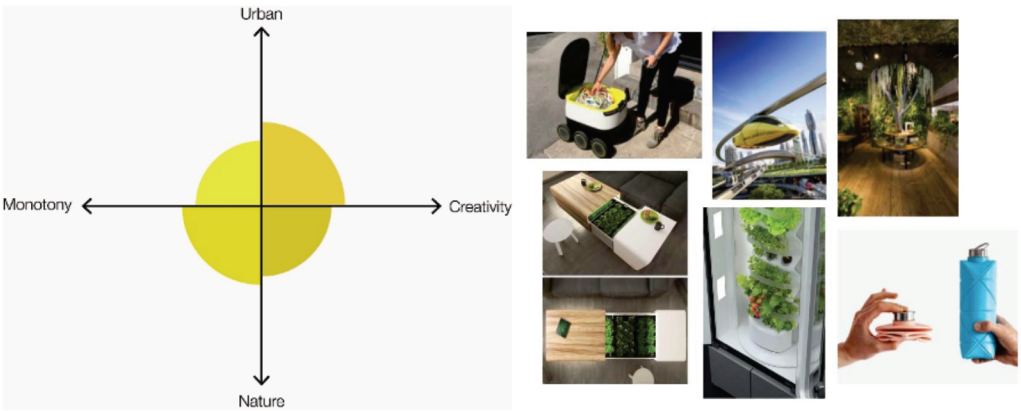
Figure 2: Polarity map and moodboard scenario.



Source: Authors

4.3 FINAL PROJECT

The proposal was to develop a product-service system to encompass different audiences, thus two types of packaging were developed that restaurants can choose to use for their delivery. Depending on the focus, target audience, and food to be sold, the restaurant will have the option to choose what type of packaging their food will be delivered in, thus bringing a differential to the restaurant and a greater closeness and interaction with its customer. Focusing on this study, efforts were directed towards the target audience of sushi delivery, as Japanese food delivery is one of the fastest-growing sectors in Brazil (iFood, 2022). Sushi is a type of food that requires care and precision in presentation, as well as being sensitive to factors such as temperature and proper handling.

A packaging designed to maintain the freshness and quality of sushi dishes during transportation is essential to ensure customer satisfaction. The packaging represented here would be the disposable version, eliminating the need for logistics and complex management associated with a returnable packaging system. This simplifies the delivery process and avoids concerns about returning, cleaning, and controlling these packages, saving time and resources for both the restaurant and the customer. It is 100% biodegradable, can go straight into organic waste after food consumption, with very low environmental impact. It allows customers to responsibly dispose of it, encouraging sustainable practices and environmental awareness. By

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providing packaging with these characteristics, the restaurant demonstrates its commitment to protecting the environment and meets the expectations of customers seeking more eco-friendly options.

4.3.1 Product Service System (PSS)

The goal of this product-service system was to establish a long-term relationship with customers by offering not only a product, but a complete solution that meets their ever-evolving needs. Each stage of the system was detailed, considering all aspects and user needs. Figure 3 shows the system in detail, explaining the six stages involved, from raw material to disposal, and highlighting the environmental benefits and conscious practices adopted throughout the process.

Figure 3: SPS Scheme.

Source: Authors

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Raw material

At this stage, the sustainable packaging company will contract with a supplier of seaweed-based paper as the raw material, due to its biodegradability, low environmental impact and compostability. The seaweed will be sustainably cultivated without harming marine ecosystems. The supplier will be selected on the basis of quality, sustainability and environmental certifications, with the company Notpla standing out as a possible supplier.

Packaging production

After obtaining the raw material, the company will start the production process of sustainable packaging. Using printing and cutting techniques, the packaging is shaped according to the desired final format. Environmentally friendly, water-based inks that are free of toxic components are used, along with printing methods that minimize the use of natural resources and the generation of waste. Production is optimized to ensure efficiency and quality.

Sales and distribution

The company will provide a website where restaurants can purchase the packaging online. The platform will also provide information on the environmental benefits of algae-based paper packaging and educate customers on the importance of sustainability. Distribution of the packaging will be efficient and sustainable. Logistics strategies will be adopted that seek partnerships with carriers committed to environmentally responsible practices.

Consumption

Upon receiving their meal, the restaurant customer will have the experience of enjoying the food packaged in algae-based paper packaging. This packaging will be designed to ensure the integrity and safety of the food during transportation. It will be leak-proof and suitable for keeping the food fresh and flavorful. Customers will be able to enjoy their meal with the peace of mind that they are helping to reduce environmental impact.

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Promotion

The company recognizes the importance of promoting its initiatives and engaging consumers in the environmental cause. Therefore, each package will include information about its website and social media channels where customers can learn more about its sustainable practices. Through these communication channels, the company will share news, tips and relevant information about sustainability to engage its customers in environmental protection.

Disposal

After food is consumed, packaging can be easily disposed of in organic waste. Clear and visible information on proper disposal will be provided on the packaging itself to guide customers. This disposal option will allow the packaging to decompose naturally, contributing to the reduction of plastic waste and caring for the planet.

4.3.2 Logo

Based on this great challenge and aiming to convey a greater sense overall, one of the objectives of the work was to create the visual identity of the product-service system that clearly conveyed the core message, its purpose, and its essential goals through the proposed visual identity. This article presents one of the elements of the visual identity, the logo. For this development, firstly, we sought a simple and understandable name, and it should also be related to the project's objectives, addressing themes such as nature, sustainability, and commitment to the planet. Thus, the result was the choice of "Meio Biopackaging," as shown in figure 4. This denomination has two fundamental intentions: to highlight the company's relationship with the environment and to express the packaging's function as a means of connection between the consumer and the restaurant/company. In this way, it synthesizes in a simple and impactful manner the values and purposes of the company. It communicates both concern for the environment and the fundamental role of packaging as a means of connection between the consumer and the restaurant/company, highlighting the sustainable proposal and the commitment to quality in food delivery segment.

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Figure 4: Final logo.

Source: Authors

4.3.3 Packaging

After the research of different materials carried out at the beginning of the project and the analysis of the options, seaweed paper was chosen for the production of the packaging because of its advantages. The characteristics of the paper produced by Notpla are exploited, which is visually distinct, tactile, fully printable and beautiful, presenting a natural and homogeneous texture, with a price suitable for the proposal. The design was based on sensory experience, literally engaging us through sight, touch and handling, taking advantage of the texture and appearance of seaweed paper. The main idea was to have a package that was easy and quick to assemble, as it is for delivery products that require short delivery times, and also eco-sized, avoiding waste with few cuts and raw material losses.

As shown in Figure 5, the components of the packaging are two box formats and a handle, with the chosen format being rectangular with dimensions of 8x16x4cm and 16x16x4cm, making it modular and facilitating stacking and transportation. The handle was designed to be ergonomically comfortable for finger placement with a modern and pleasant design. The assembly was designed with folds and fittings that avoid glues and other chemicals, ensuring the principles of the project. The closure of the packaging was solved in a drawer format due to the solution adopted for transportation, providing more security and comfort, offering a differential among the packaging in the market, with a more elaborate visual and shape.

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Figure 5: 3D design of the packaging and its prototype.

Source: Authors

For transport, a stacking system has been created that ensures stability thanks to the handle that surrounds and embraces the boxes, avoiding the use of plastic bags for deliveries. The final solution provided a practical and real result of environmental contribution, where the packaging ceases to be just another beautiful wrapping, moving from the category of a commodity to gain the status of a communication and awareness piece, which must have an emotional dimension to convey its difference, its purpose and the brand values it carries.

After numerous tests of folds, fittings, cuts and sizes, the final model was arrived at and a prototype was developed to verify the feasibility of the packaging. Since seaweed paper is not yet available, a prototype was created that simulated the original packaging. In addition, it was designed in modules and with a handle to avoid the use of plastic bags for transportation.

Based on the packaging prototype, viability tests were conducted to assess impressions of aesthetics, functionality, sustainability, and possible modifications or adaptations. To understand the impressions of potential consumers, prototypes were sent to 10 people who consume sushi, along with an explanation of the project and a questionnaire to be answered after evaluating the prototype.

Validation was extremely important as several people received and interacted with the product, resulting in very satisfactory feedback. Overall, the feedback was quite positive, with some very relevant considerations to reinforce the drawers of the packaging to avoid possible problems, with suggestions such as using branded stickers from the restaurant as locks. In terms of aesthetics, there was positive feedback, with it being considered beautiful, pleasant, with the color,

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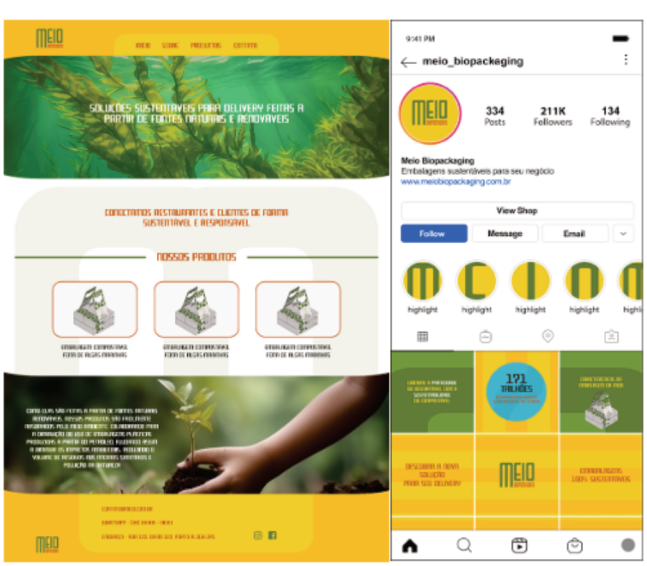
graphic design and texture evoking sustainability. This appearance was also seen as light, pleasant, and conveying the idea of the product's care for the environment. An interesting point of feedback was the clean and clear appearance, which was seen as positive because it allows easy identification of dirt or damage that may have occurred during food transport, according to the evaluators. Finally, the modules and handles were considered well designed to avoid the use of plastic bags during transportation. It's worth mentioning that, being the first generation of prototypes and the first test, the results were satisfactory.

In terms of communication, the creation of a website and profiles on social networks such as Instagram and Facebook (Figure 6) were considered for content sharing and product promotion, as well as their benefits and advantages. For example: hashtags, partnerships with influencers, regular posting, engagement with followers, creation of tutorials, with the aim of provoking reflective thinking in its consumers related to brand values, sustainability and the environment. The website was developed as a platform to explain the project, its goals and similar initiatives, as well as to market the products. The goal was to create a visually appealing, easy-to-navigate and intuitive interface, as shown in the figure below.

Figure 6: Screens for the proposed website and social media platforms.



Source: Authors.

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5. FINAL CONSIDERATIONS

The packaging was designed to convey its connection with the environment, its sustainability, and to awaken the need for preservation and care for nature, with the development of the brand being important to translate all these concepts. In the materialization of the packaging, many models were studied until the final solution most suitable for the service to be offered was found. Subsequently, during the prototyping phase, efforts were made to closely resemble the original paper and facilitate assembly, benefiting both the restaurant and its staff.

Validation played a crucial role, as various individuals received and interacted with the product, resulting in very positive feedback. The packaging prototype can be considered an accurate representation of how it would function if it were effectively produced on a large scale. Usability tests played a fundamental role in providing insights into the strengths and weaknesses of the project, being of utmost importance to ensure that usability and accessibility reached a satisfactory level, providing a positive experience for the user. Finally, it is important to highlight that the packaging project not only achieved its goal of communicating the connection with the environment and sustainability but also stimulated awareness about preservation and care for nature.

REFERENCES

ACORDO de Paris Sobre o Clima. In: ONU BRASIL. Brasília. Disponível em: https://brasil.un.org/pt-br/node/88191. Acesso em: 01/10/2022.

AVILA, A. P. S. et al. Os Resíduos Têxteis Sólidos no Contexto de Abordagens Sustentáveis: Ciclo de Vida, Economia Circular e Upcycling. MIX Sustentável, [S.l.], v. 4, n. 3, p.17-24, out-mar. 2018. ISSN 24473073. Disponível em: https://ojs.sites.ufsc.br/index.php/mixsustentavel/article/view/2555/2500. Acesso em: 01/09/2022.

CAMILO, Assunta Napolitano. Embalagens de papel cartão, papel e microondulado. 01 Edição. Barueri: Instituto da embalagem, 2009.

v. 133 n. Dossiê Especial (SDS 2023): Artigos selecionados - SDS2023 (IX Simpósio de Design Sustentável)
DOI: 10.5007/2238-2542.2026.e106298

176 p. E-book. Disponível em: https://cetesb.sp.gov.br/veicular/wp-content/uploads/sites/6/2020/11/Relatorio-Emiss oes-Veiculares-noEstado-de-Sao-Paulo-2019.pdf. Acesso em: 20/03/2023.

CELASCHI, F.; DESERTI, A. Design e Innovazione. Strumenti e Pratiche per la Ricerca Applicata. Carocci, 2007.

CEMPRE Review 2019. In: CEMPRE. São Paulo, 2019. Disponível em: https://cempre.org.br/wp-content/uploads/2020/11/CEMPRE-Review2019.pdf. Acesso em: 15/03/2023.

FINESTRALI, M.; REYES, P. O metaprojeto como oportunidade de redefinição de problemas de design. Artigo. 9º Congresso de Pesquisa e Desenvolvimento em Design, São Paulo. 2010.

FRANZATO, C.; CELASCHI, F. Processo de metaprojeto para o desenvolvimento estratégico e a inovação das organizações. In: 10° CONGRESSO BRASILEIRO DE PESQUISAS E DESENVOLVIMENTO EM DESIGN, 2012. Anais [...]. 2012.

GALISAI, R.; BORBA, G.; GIORGI, R. Design como Cultura de Projeto e como Integração entre Universidade e Empresa. Artigo. 8º Congresso de Pesquisa e Desenvolvimento em Design, São Paulo. 2008.

MANZINI, E. Design para Inovação Social e Sustentabilidade | Comunidades Colaborativas e Novas Redes Projetuais. Rio de Janeiro. 2008.

MESTRINER, F. Design de embalagem: curso básico. são paulo: makron books, 2002.

MORAES, D. Metaprojeto: o design do design. Blucher, 2010.

NASCIMENTO, M. Inovação pelo Design no Setor de TI: um estudo de caso em empresas de softwares do RS. Dissertação (Mestrado) — Universidade do Vale do Rio dos Sinos-UNISINOS, Programa de Pós-Graduação em Design Estratégico. Porto Alegre, 2017.

NORMAN, Donald A. Design emocional: por que adoramos (ou detestamos) os objetos do dia-a-dia. Rio de Janeiro: Rocco, 2008. 278 p.

NOTPLA. Londres, 2022. Disponível em: https://www.notpla.com/. Acesso em: 10/10/2022.

PEREIRA, P. Z.; SILVA, R. P. Design de embalagem e sustentabilidade: uma análise sobre os métodos projetuais. Design e Tecnologia, v.

1, n. 02, p. 29-43, 2010. Disponível em: https://www.ufrgs.br/det/index.php/det/article/view/34. Acesso em: 20/09/2022.

PNRS. Política Nacional de Resíduos Sólidos, 2010. Disponível em: https://www.planalto.gov.br/ccivil_03/_ato2007-2010/2010/lei/l12305.htm. Acesso em: 06/10/2022.

SILVA, A. H. M. et al. Avaliação da gestão de resíduos sólidos urbanos de municípios utilizando multicritério: região norte do Rio de Janeiro. Brazilian Journal of Development, 4(2), 410–429, 2018. Disponível em: https://ojs.brazilianjournals.com.br/ojs/index.php/BRJD/article/view/59/0. Acesso em: 20/08/2022.

SIMON, Herbert A. As ciências do artificial. Coimbra: Arménio Amado, 1981. 351 p.

SOLUCIONAR a poluição plástica: transparência e responsabilização. In: WWF, 2019. 50 p. Disponível em: https://promo.wwf.org.br/solucionar-a-poluicao-plastica-transparencia-e-responsabilizacao. Acesso em: 18 março 2023.

ZAVADIL, P., & Silva, R. P. da. Identificação e sistematização de diretrizes para o design de embalagens sustentáveis. Design e Tecnologia, 3(05), 35-47, 2013. Disponível em: https://www.ufrgs.br/det/index.php/det/article/view/134. Acesso em: 20/09/2022.

ZURLO, F. Un modello di lettura per il Design Strategico. La relazione tra design e strategia nell'impresa contemporanea. Dottorato di Ricerca in Disegno Industriale – XI ciclo. Politecnico di Milano, Milano, 1999. 247 p.

Nícolas Cerri Mester

Has a degree in Strategic Design from the University of Vale do Rio dos Sinos (2023). Completed a permaculture design course at the "Hava & Adam" Eco Educational Farm (2017). Currently works as a Designer at evo2b, specializing in visual communication, wayfinding, and brand development with a focus on retail.

http://lattes.cnpq.br/0571162478739707.

André Canal Marques

He holds a Postdoctoral Degree in Design from PUC-RJ, Pontifical Catholic University of Rio de Janeiro (2022), a Ph.D. in Engineering (with a concentration in Materials Science and Technology) from UFRGS - Federal University of Rio Grande do Sul, and an International Ph.D. in Materials Science and Engineering from UPC - Universitat Politècnica de Catalunya (2016). He also holds a Master's Degree in Engineering (with specialization in Materials Science and Technology) from UFRGS - Federal University of Rio Grande do Sul (2008), a Specialization in Graphic Expression from PUC-RS - Pontifical Catholic University of Rio Grande do Sul (2006), and a Bachelor's Degree in Product Design from UNIJUI - Regional University of Northwestern Rio Grande do Sul State (2004). Currently, he coordinates the technological undergraduate program in Product Design and the Creative Industry Labs at FabLab Unisinos Porto Alegre, and he is a professor in the undergraduate programs in Product Design, Design and Materials Engineering at the University of Vale do Rio dos Sinos (UNISINOS). He is part of the LeNS Brazil Network (Learning Network on Sustainability). His expertise lies in the field of product design, with a focus on material selection, life cycle assessment, sustainability, generative design, Industry 4.0, and additive manufacturing/3D printing.

https://orcid.org/0000-0001-7756-3117.

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